



Application No. 10/697, 833
Filed 10/30/03

Docket No. 2002-0150 / 24061.470
Customer No. 42717

Remarks/Arguments

Reconsideration of this application in light of the above amendments and the following remarks is requested.

The specification has been amended to correct some informalities.

Original claims 1 and 27 have been amended and claims 2-26 and 28-31 have been maintained in their original form. Claim 32 has been added.

Rejections under 35 U.S.C. § 102

Claims 27-31

Independent claim 27 was rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,593,198 to Segawa ("Segawa"). It appears to be the Examiner's position that Segawa contains all of the limitations of claim 27 but teaches the claim elements in a different order than recited in claim 27. Without commenting upon the persuasiveness of this line of reasoning, the Applicant has amended claim 27 to clarify that at least the last element of the claim occurs after the plasma treatment. The last element of claim 27 now reads, "respectively forming a pair of spacers over sidewalls of said patterned gate oxide and gate material following the plasma treatment," (emphasis added). Thus, claim 27 should now be in condition to overcome the rejection based on Segawa.

Independent claim 27 was also rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,323,519 to Gardner et al. ("Gardner"). As the PTO provides in MPEP § 2131, "[t]o anticipate a claim, the reference must teach every element of the claim..." However Gardner fails to teach, "performing a plasma treatment to said patterned gate material and said substrate," as recited in claim 27. The Examiner

states in the Office Action that, “the ‘comprising’ format of [claim 27] does not exclude Gardner’s process step for forming an oxide layer.” While the statement made by the Examiner may be generally true, it does not follow that claim 27 is anticipated by Gardner. Claim 27 requires, “performing a plasma treatment to said patterned gate material and said substrate,” (emphasis added). Thus the teaching of Gardner, wherein, “[the] oxide 22 is exposed to plasma treatment,” (col. 8, lines 13-14), does not teach “performing a plasma treatment to said patterned gate material and said substrate.” Thus, claim 27 should now be in condition to overcome the rejection based on Gardner and should be in condition for allowance.

Dependent claims 28-31 depend from and further limit independent claim 27. Since it has been shown above that claim 27 is now in condition to overcome the rejections based on Segawa and Gardner, claims 29-31 should also be in condition for allowance.

Claims 1-6

Independent claim 1 was rejected under Gardner upon the same reasoning as claim 27. Here, again, the Applicant maintains that while the Examiner’s statement that, “the ‘comprising’ format of the claims does not exclude Gardner’s process step for forming an oxide layer,” may be generally true, Gardner is actually failing to teach at least one element of claim 1. Claim 1 has been amended to clarify the meaning intended by the applicant. Claim 1 now recites in part, “performing a plasma treatment of the patterned and etched layer of gate material and exposed surfaces of the provided substrate,” (emphasis added). By referencing the provided substrate, a processing sequence is thereby required. Thus the teaching of Gardner, wherein, “[the] oxide 22 is exposed to plasma treatment,” (col. 8, lines 13-14), does not teach a “plasma treatment of the ... exposed surfaces of the provided substrate.” Thus, claim 1 should now be in condition to overcome the rejection based on Gardner, and should be in condition for allowance.

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Dependent claims 2-6 depend from and further limit independent claim 1 and therefore should also be in condition for allowance.

Rejections Under 35 U.S.C. §103

Claims 7-26 were rejected under 35 U.S.C. § 103 as unpatentable over various combinations of Segawa, Gardner, U.S. Patent No. 6,387,735 to Ueda ("Ueda"), and U.S. Patent No. 5,425,843 to Saul et al. ("Saul"). In each case, the Examiner has relied on Gardner to satisfy at least some of the claim limitations, including those discussed above relating to the 35 U.S.C. § 102 rejections.

Each of the independent claims 7, 14, 18, 22, and 26 requires at least some plasma treatment of the sidewalls of the gate electrode and exposed substrate, as do claims 1 and 27 previously discussed. As has been stated, Gardner does not actually teach this but teaches that "[the] oxide 22 is exposed to plasma treatment," (col. 8, lines 13-14). The Applicant respectfully disagrees with the Examiner's statements that a plasma treatment of the oxide layer of Gardner amounts to a plasma treatment of the patterned and etched layer of gate material and exposed surfaces of the substrate. Gardner states at col. 8, lines 14-16 that, "[t]he objective of plasma treatment 2 is to expose oxide 22 to nitrogen ions and radicals..." Thus, not only does Gardner fail to teach all of the elements for which it has been cited, it actually teaches away from a plasma treatment of the sidewalls and exposed substrate since the oxide layer of Gardner covers all of the structure. Therefore each of the independent claims should be allowable over the combination of Gardner with any of the other cited references.

Dependent claims 8-13, 15-17, 19-21, and 23-25 each depend from and further limit one of the dependent claims discussed above. These claims should therefore also be allowable over the combination of Gardner and any of the other cited references.

New Claims

Claim 32 has been added and Applicant submits that it is neither taught nor suggested by any of the cited references nor combinations thereof and should be in condition for allowance.

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Conclusion

It is clear from all of the foregoing that all pending claims are in condition for allowance. If the Examiner should feel that any further amendments are needed to place the application in condition for allowance, please contact the undersigned.

Respectfully submitted,



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